United States Department of Agriculture	Forest Service	United States Department of Interior	Bureau of Land Management	Environmental Protection Agency

Date: May 19, 1999

To: Forest Supervisors and District Managers

From: FS Regional Foresters (1,4, and 6), and BLM State Directors (OR, WA, ID, and MT)

Subject: Water Quality Protocol for 303 (d) listed waterbodies

Enclosed is the joint Bureau of Land Management (BLM) and Forest Service (FS) protocol for addressing water quality impaired waterbodies listed under section 303 (d) of the Clean Water Act (hereafter referred to as the Protocol) . The Protocol represents many hours of collaborative work with state agencies, federal regulatory agencies, and representatives from tribal governments. It is designed to provide a consistent approach for meeting Clean Water Act (CWA) requirements for impaired waterbodies on federal land under the jurisdiction of the Forest Service or BLM. Key elements include: the strategy, decision framework, linkages to other planning processes, and a hierarchical description of how this fits with other planning efforts.

It is important to implement the Protocol in a coordinated, collaborative effort with the State environmental agency responsible for the Clean Water Act, other Federal or State agencies and tribal governments with jurisdiction or interest, and local entities such as watershed councils, etc. Activities should be focused on priorities established in the Unified Watershed Assessment process of the Clean Water Action Plan (CWAP). This will ensure that subtle differences in requirements by different States will be known early in the process, foster ownership in the final product, increase the ability to address water quality problems on a watershed basis, and assist in meeting the objectives of the CWAP.

Successful implementation of the Protocol will require:

- Aggressive implementation through the use of targets or other mechanisms to ensure goals and objectives of the Protocol and the CWAP are met.
- Utilization of all other planning processes, land allocations, etc., that include elements that address water quality problems, while ensuring that any new planning efforts follow the Protocol for addressing water quality impaired waterbodies included in the planning area.
- A coordinated, collaborative effort with state, tribal, private, and other federal partners using the Unified Assessment of the CWAP and/or the State TMDL (Total Maximum Daily Load) schedule to focus activities.

The Protocol has been implemented in the Pacific NW Region of the Forest Service and the BLM in Oregon/Washington in draft form for the last two years. As a result, several streams have been addressed and delisted from validation (the first step of the Protocol), and several WQRPs (Water Quality Restoration Plans) have been developed. To date, there is one WQRP that has been formally approved by EPA as a suite of TMDLs (Total Maximum Daily Loads), Grayback-Sucker, developed on the Siskiyou National Forest, in conjunction with the Medford District of the BLM, and the Oregon Department of Environmental Quality.

Water Quality

To assist in the implementation effort, six water quality impaired waterbodies have been selected as pilots for the development of WQRPs. Since we have approved examples for the area west of the Cascade Mountains, the pilots were restricted to the interior west, and represent areas from the Basin and Range to the Northern Rocky Mountains. Results will be made available on completion.

In the meantime, copies of the Grayback-Sucker WQRP are available from the following E-mail address: http://waterquality.deq.state.or.us/wq/tmdls/tmdls.htm. Our expectation is that the Protocol will be implemented immediately.

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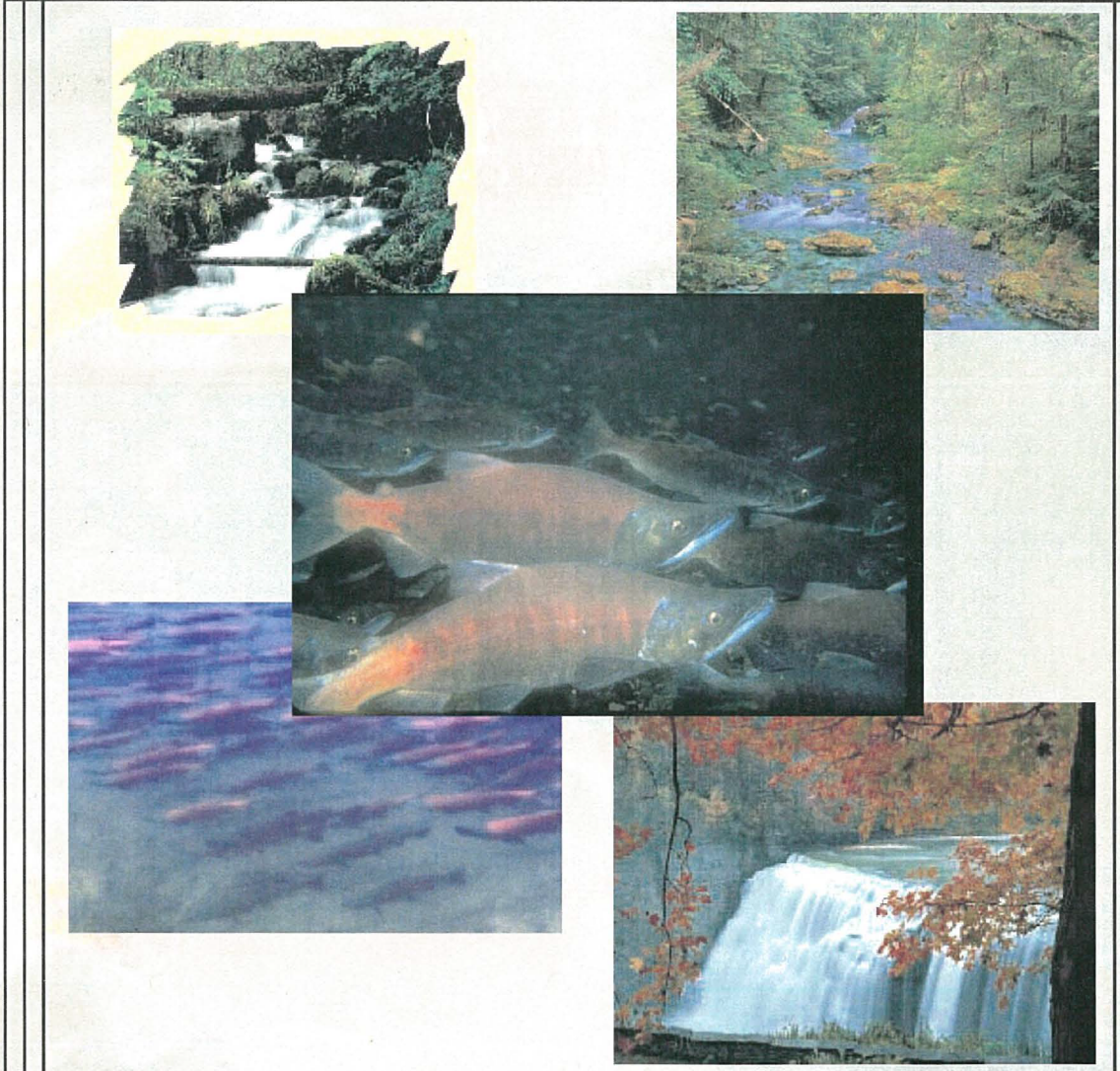
Forest Service and Bureau of Land Management Protocol for Addressing Clean Water Act Section 303(d) Listed Waters



May 1999
Version 2.0

Forest Service and Bureau of Land Management Protocol for Addressing Clean Water Act Section 303(d) Listed Waters

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To date, this protocol is applicable for use in Forest Service Regions 1, 4, and 6; Oregon, Washington, Idaho, and Montana Bureau of Land Management State Offices; and the Environmental Protection Agency Regions 8, 9, and 10.

Acknowledgments

The protocol for addressing Clean Water Action Section 303(d) listed waters was developed collaboratively by the Forest Service, Bureau of Land Management, and Environmental Protection Agency. Although this process was initiated as a component of the Interior Columbia Basin Ecosystem Management Project (ICBEMP), listed waterbodies are pervasive throughout the northwest and the country and the executives overseeing the ICBEMP have endorsed the application of the protocol to include lands under their jurisdiction outside of the ICBEMP. Although there is a small group of primary authors of the protocol, there have been many other contributors. The protocol incorporates work done for similar needs in Region 6 of the Forest Service and the Oregon/ Washington State Office of the Bureau of Land Management. Many agencies including National Marine Fisheries Service; Fish and Wildlife Service; tribal governments; Department of Environmental Quality for Oregon, Idaho, Montana, Wyoming, and Nevada; and Department of Ecology in Washington have contributed to its development. Most contributors are listed in the appendix but there are others who have provided helpful ideas; our thanks and appreciation to all. We hope we can receive continued input as the protocol is put into use, to adapt and improve the content and usability of the process.

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Introduction

It is the responsibility of the Forest Service (FS) and the Bureau of Land Management (BLM) as Federal land management agencies through implementation of the Clean Water Act (CWA), to protect and restore the quality of public waters under their jurisdiction. Protecting water quality is addressed in several sections of the CWA, including sections 303, 313, and 319. Best Management Practices (BMPs) are used to meet water quality standards (or water quality goals and objectives) under Section 319. Waterbodies that do not meet water quality standards with implementation of existing management measures are listed as impaired under section 303(d) of the CWA.

Mission Statement

The Forest Service and BLM will protect and maintain water quality where standards are met or surpassed, and restore water-quality-limited waterbodies within their jurisdiction to conditions that meet or surpass standards for designated beneficial uses.

The following two goals state the expectations for this mission:

> ***GOAL 1:*** To protect waters meeting or surpassing State or tribal water quality standards. The BLM and Forest Service will design land management activities so that existing levels of water quality and beneficial uses are maintained and protected.
>
> ***GOAL 2:*** To proactively address all impaired waterbodies on Forest Service- and BLM-administered lands on current 303(d) lists within five years, while being consistent with State and tribal timelines.

The Forest Service and BLM will address impaired waters by: (1) validating that a waterbody is incorrectly listed or has been adequately restored; (2) documenting and implementing sufficiently stringent management measures; (3) developing and implementing Water Quality Restoration Plans (WQRPs); or (4) using other available mechanisms including changes in water quality standards, etc..

Background

Section 303(d) of the CWA requires that waterbodies violating State or tribal water quality standards be identified and placed on a 303(d) list. The Environmental Protection Agency (EPA) regulations also allow States and tribes to include threatened waters (that is, waters that display a downward trend that suggests water quality standards will not be met in the near future). Once listed, current EPA regulations identify three conditions that, when met, will lead to removal of waterbodies from the 303(d) list:

1. Applicable water quality standards are maintained or attained;
2. Sufficiently stringent pollution requirements are applied; or
3. Total Maximum Daily Load requirements are implemented.

For each listed waterbody, the CWA requires States to establish a Total Maximum Daily Load (TMDL) for the parameter(s) causing beneficial use impairment. A TMDL is the sum of the waste load allocation for point sources of pollution (for example, outflow from a manufacturing plant) plus the load allocation for nonpoint sources of pollution, including "natural" background levels, plus a margin of safety to allow for uncertainty.

It is a State's responsibility to develop their respective 303(d) list and establish a TMDL for the parameter(s) causing waterbody impairment (that is, a violation of State or tribal water quality standards and failure to support beneficial uses). In most cases, TMDLs will not prescribe what specifically must be done to meet allocated loads. The development and implementation of Water Quality Restoration Plans (or, in some specific instances, sufficiently stringent management measures) provide the specific actions by which the Forest Service and BLM will meet TMDL requirements on lands under their jurisdiction. Thus, these plans are required even if a TMDL has already been established.

The purpose of this protocol is to provide a consistent mechanism for the Forest Service and BLM to meet this responsibility, bring waters into compliance within a reasonable timeframe, and support State development of TMDLs. The protocol includes a strategy and decision framework for addressing the Clean Water Act Section 303(d) requirements on Forest Service- or BLM-administered lands.

The protocol development is based on the following premises:

- The legal mechanism to restore impaired waters is through application of State-developed and EPA-approved TMDL as identified in the CWA Section 303(e).

- The development and implementation of a Water Quality Restoration Plan (WQRP) is the primary mechanism to address and restore impaired waters on Forest Service- or BLM-administered lands and to support State development and implementation of TMDLs on those lands.

- WQRPs, or implementation of sufficiently stringent measures, provide specific actions required to restore water quality or implement a TMDL. Thus, development of a WQRP is required whether or not a TMDL is already in place.

- Development and implementation of WQRPs will meet Forest Service and BLM responsibilities for listed waters, allow management activities that complement a WQRP to proceed, and ensure that management activities lead to attainment of water quality standards and beneficial uses.

- Due to workload backlog, it will take States a number of years to develop TMDLs for all 303(d) listed segments. In the meantime, any proposed or existing activity that has the potential to further degrade a listed water is at risk of legal challenge.

- WQRPs will provide the necessary context for making land management decisions that lead to restoration of impaired waters.

- A WQRP is a key ingredient for State and tribal development of load/wasteload allocations on Forest Service- or BLM-administered lands that lead to a TMDL or that describe how a TMDL will be implemented. The degree to which this information will be used for TMDL development will vary from State to State or tribe to tribe.

- To be successful the implementation of the protocol will require a collaborative approach. To this end, State agencies, tribal governments, National Marine Fisheries Service, U.S. Fish & Wildlife Service, and EPA collaborated in the development of this protocol.

Additional information on 303(d) listed segments and/or TMDLs is available from the following sources: EPA Regions 8 (Denver), 9 (San Francisco), and 10 (Seattle), the Idaho Division of Environmental Quality, Oregon Department of Environmental Quality , Washington Department of Ecology, and Montana Department of Environmental Quality. In addition, the *Clean Water Action Plan* (February 1998) includes additional information in the form of expectations, key actions, and targets for meeting water quality restoration goals.

While this protocol addresses water quality related issues on Forest Service- or BLM-administered lands, it recognizes that many water quality problems are a result of activities on both public and private land. In mixed ownership watersheds, Forest Service and BLM land managers should work with the State water quality agency, tribes, and private land owners to develop WQRPs and TMDLs using a watershed approach and that are coordinated with the *Clean Water Action Plan* (CWAP) assessments and planning efforts. When Forest Service- or BLM-administered lands dominate or are intermingled with private lands in a watershed, information from planning processes or other documents that are pertinent to the water quality problem should be shared with the State water quality agency for use in their development of a TMDL for the 303(d) listed waterbody and to determine State, tribal, and Federal watershed priorities.

The CWA requires the States to develop TMDLs. The EPA has final approval of State developed TMDLs. Development and implementation of WQRPs by the BLM and Forest Service, to address impaired waters on Federally administered lands supports State TMDL development. This includes incorporation of water quality issues and restoration needs into an array of Forest Service and BLM activities such as mid- and watershed-scale analyses, land use plans, project proposals, and feedback from inventory and monitoring. The contents of a WQRP are purposely structured to include many of the same items as required for a TMDL. Development of the required load allocations with subsequent State concurrence and EPA approval, supply the additional needed pieces for a TMDL. In some States, development of the load allocation is a requirement for adoption of a WQRP. In others, the WQRP is submitted to the State for their use in developing the load allocations and TMDL. The TMDL allocates the load, but does not include the specific actions that will meet the load allocation. The development of the WQRP (or, in some instances, implementation of sufficiently stringent management measures) provides the specific actions that will lead to the attainment of the allocation. The key to creating successful WQRPs is to work with the designated State water quality agency on their specific requirements.

Common elements of a WQRP include:

- Condition assessment and problem description;
- Goals and objectives;
- Management actions to achieve objectives;
- Implementation schedule;
- Monitoring/evaluation plan; and
- Public participation plan.

It is the responsibility of the Forest Service and BLM to address these elements for Federally administered lands. Where there is mixed ownership within the assessment area, initiative will be taken to develop WQRPs in a collaborative manner that addresses the entire watershed.

Strategy

The BLM and Forest Service strategy for addressing State or tribal 303(d) listed segments and/or developing a WQRP has seven components that outline an efficient way to address water quality within existing planning processes. The strategy also sets the stage for the application of the decision framework. To successfully carry out the strategy it will be necessary to work collaboratively with the State agencies and tribes. The components include the following actions:

1. Validate the current 303(d) lists and listing rationale.
2. Work with the State agencies and local tribes to set priorities and timelines for addressing listed waterbodies.
3. Document and present evidence to the respective State where sufficiently stringent management measures have been implemented to bring listed segments into compliance in a reasonable timeframe.
4. Organize existing plans and other documents to support or serve as a WQRP where they adequately address 303(d) listed streams.
5. Combine, where practicable, WQRP requirements with other analysis and planning processes.
6. Revise the Memoranda of Agreement or Understanding (MOAs or MOUs) with the States and affected tribes to reflect current conditions, practices, responsibilities, priorities, timelines, and accountability.
7. Make the restoration of impaired waterbodies an agency priority, and annually assign WQRP development targets to field units.

The following addresses each component in detail:

1. Validate the current 303(d) lists and listing rationale.

The first step in addressing a listed waterbody is to validate whether or not the water quality standard(s) is being violated. Since the designated State water quality agency is ultimately responsible for the listing/delisting process, it is important to follow State criteria or procedures to list/delist. Evaluation of the current 303(d) lists may reveal one of the following situations:

- Listing is based on perception and judgment rather than data.
- Precision and accuracy of the data used to make the determination are suspect.
- A change in standards has brought the segment into compliance.
- The segment is correctly listed.

In addition, streams may belong on the 303(d) list that have not yet been listed. These cases require additional investigation. This may mean taking a closer look at the available data, monitoring to validate the problem, or doing a hydrologic condition assessment to ascertain the processes involved. All water quality monitoring data and results of the hydrologic condition assessment should be shared with the State water quality management agency.

2. Work with the State agencies and local tribes to set priorities and timelines for addressing listed waterbodies.

The key to integrating WQRPs with other agency responsibilities is to establish a clear set of priorities to address 303(d) listed waterbodies. Other criteria, and prioritization efforts, need to be integrated in order to achieve success. For example, past and ongoing restoration efforts initiated under the Northwest Forest Plan often include 303(d) listed waters.

Other efforts will need to be factored into the scheduling of where the BLM and Forest Service will develop WQRPs to address 303(d) listed segments. Examples are: (1) the recently completed Unified Assessment and Prioritization process identified under the *Clean Water Action Plan* (CWAP) which brought States, tribes, Federal agencies and the public together to categorize and prioritize subbasins for restoration work; and (2) prioritizing efforts from the subbasin review and step-down processes initiated under the Interior Columbia Basin Ecosystem Management Project (ICBEMP).

3. Where sufficiently stringent management measures have been implemented to bring listed segments into compliance in a reasonable timeframe, present evidence to the respective State.

The EPA's Section 303(d) guidance to State agencies gives them the option to not list or to remove from the list impaired waterbodies where sufficiently stringent Best Management Practices (BMPs) or other management practices are in place to restore water quality within a reasonable timeframe (the EPA's current definition of reasonable timeframe is two years). The EPA's regulations State that these measures must be established and enforced by Federal, State, or local laws and regulations. While the current timeframe often precludes delisting for nonpoint source problems, the States have the option of placing these waterbodies on a different list noting that sufficiently stringent measures are in place to restore water quality but the timeframe will be longer than two years.

4. Organize existing plans and other documents to serve as a WQRP where they adequately address 303(d) listed streams.

Many WQRP requirements, from condition assessment to management objectives, may be found in existing plans and other documents such as *Ecosystem Analysis at the Watershed Scale, Federal Guide for Watershed Analysis (Federal Guide for Watershed Analysis;* August 1995, version 2.2), hydrologic condition assessments, roads analysis process, National Environmental Policy Act (NEPA) documents, land use plans, and watershed restoration plans under CWAP implementation. Because these documents are often developed for other purposes, it may be difficult to determine if water quality problems have been adequately addressed unless the information is evaluated against what is required in a WQRP.

5. Combine, where practicable, WQRP requirements with other analysis and planning processes.

A current BLM and Forest Service goal is to combine multiple analysis and planning requirements as they conduct assessments and analyses and undertake various planning efforts. Where assessments, analyses, or planning areas cover 303(d) listed streams and are of an appropriate scale, include the respective WQRP requirements with that planning effort. If the requirements are met the resulting document could serve as a WQRP.

Alternatively, where a WQRP is being developed, combine that effort, where practicable, with other planning and analysis projects as described above (e.g., existing and current efforts to address recovery of aquatic species listed as threatened or endangered through the Endangered Species Act). In most cases, the development of biological opinions, recovery plans etc., will have information and analysis complementary to WQRPs. When this situation is encountered, both needs should be considered concurrently to avoid duplication of effort.

6. Revise the MOAs or MOUs with the States to reflect current conditions, practices, responsibilities, priorities, and timelines.

Many of the existing Memoranda of Understanding or Agreement relating to nonpoint source pollution control between the Forest Service and BLM and State regulatory agencies are outdated or do not address 303(d) strategies, TMDL policy, and CWAP implementation and need to be amended to:

1. Reflect the new management standards and guidelines, current environmental documents, and recent legal and policy developments.
2. Address priorities and timelines for WQRP development.
3. Meet specific State requirements for a WQRP, where applicable.
4. Accommodate biennial updates of State 303(d) lists.

7. Make the restoration and implementation of 303(d) listed waterbodies an agency priority and annually assign WQRP targets to field units.

The Forest Service and BLM need to make the restoration of 303(d) listed waterbodies an agency priority, and annually assign WQRP development targets.

Decision Framework Diagram And Narrative

The following decision diagram (Figure 1) depicts decision points and the general sequence for addressing a 303(d) listed waterbody. It also illustrates the general pathway of, and linkages to, State or tribal processes. The accompanying narrative provides additional information and guidance on the application of the framework.

Use of the decision framework should provide reasonable assurance that 303(d) listed waters on Forest Service- or BLM-administered lands are addressed with an appropriate level of technical rigor. It also provides a consistent approach for watershed planning and the development of a WQRP (or documentation that current measures are sufficiently stringent to bring affected waters back into compliance) that will set the context for land management activities. The framework includes a

discussion of the linkages to other assessment and planning processes with the goal of avoiding duplication of effort while addressing overlapping aquatic concerns in the most efficient manner possible.

The framework is not intended to define the State TMDL development or listing/delisting processes. However, it does produce information that can be incorporated directly into State processes. In situations where listed waters are exclusively on, or impacted by, Federal lands it is expected that information included in a WQRP will meet most or all of the State requirements for a TMDL. While State agency and tribal government representatives have provided their perspective and experience in the development of the framework, it may not completely satisfy each of the States or tribes requirements. It is important to establish any additional criteria a respective State or tribe may have, and to work collaboratively in the development of the WQRP.

The Forest Service and BLM will coordinate the application of the framework with appropriate State agencies and tribal governments to accommodate their priority schedules for TMDL development. In watersheds with multiple ownerships, the Forest Service and BLM may work with the States or tribes and private citizens to jointly develop a TMDL. This will assist in meeting responsibilities under the *Clean Water Action Plan* (CWAP) by ensuring priorities, as identified in the Unified Assessment process, are being addressed and key action items implemented. In other watersheds where the Forest Service and BLM may want to proceed with activities, water quality restoration needs will be developed ahead of the State schedule using this protocol under the umbrella of CWAP.

Using the Decision Framework

The decision framework delineates a process for addressing BLM and Forest Service management options where there are listed waters. Any one of the following actions may initiate the decision framework:

- State or Tribal TMDL Priority and Development Scheduling. The framework would be applied prior to, or concurrent with, State priorities for development of TMDLs. Additionally, the framework is used if the development of a TMDL precedes the development of a WQRP or other mechanisms that outline the steps necessary to meet TMDL requirements.

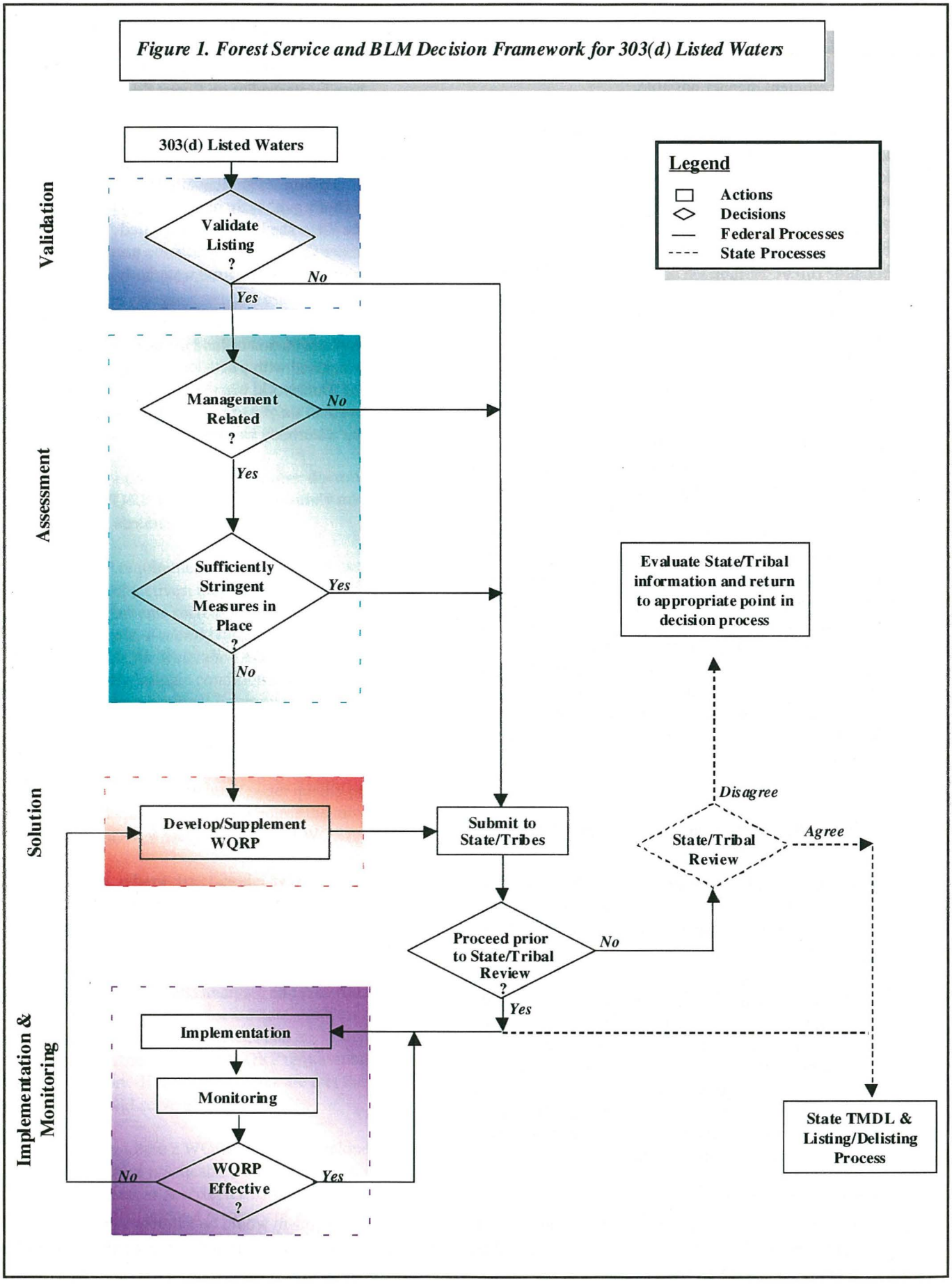
- Agency Goal Setting. The strategy identifies an agency goal to address, within five years while being consistent with State timelines, all 303(d) listed waterbodies on Forest Service- or BLM-administered lands

- Watershed- or Broader-Scale Planning. A number of ongoing assessment and planning processes including subbasin review, Ecosystem Analysis at the Watershed Scale, and Unified Assessments under CWAP, may initiate the need to address a water quality impaired waterbody.

- Project Implementation. The development and implementation of land management projects in a watershed with a listed waterbody requires use of the framework, where the project has a potential to affect the parameter or parameters for which the waterbody was listed. [1]

[1] An example of where a project has no potential to effect the parameter of conern would be a timber sale and the listing parameter is for acid mine runoff. This evaluation is done in Step 2 of the framework in anwering the question "Is the problem management-related?

Figure 1. Forest Service and BLM Decision Framework for 303(d) Listed Waters



Decision Framework Steps

There are four steps in the decision framework: (1) validation, (2) assessment, (3) solution development, and (4) implementation and monitoring. These steps, as illustrated by the decision framework, show the concurrent and parallel pathways that delineate the Federal and State processes.

Validate Listing

The first step of the process is to work with the States and tribes to validate whether or not a 303(d) segment is appropriately listed. States are ultimately responsible for validating the 303(d) lists and submitting them to EPA for approval. Applicable State listing/delisting procedures should be used. The validation usually includes evaluating existing water quality data relative to the pollutants of concern identified as causing beneficial use impairment. In some cases, additional information may be needed to validate whether or not the water belongs on the 303(d) list. At the same time, when additional information demonstrates an impaired condition and the need for listing, the information should be submitted to the State for use in their listing/delisting process. Without information to support validity of the listing the assumption is that the waterbody is impaired.

The ability of States to determine whether or not water quality standards are being met or if waterbodies are threatened or impaired varies, and is dependent on:

- The data used to support the original 303(d) listing determination (a single sampling event, two years of continuous monitoring, sampling according to State criteria, etc.).
- Applicable State listing/delisting procedures.
- The relevant current data available for consideration.
- The complexity of water quality problems (listings for multiple parameters, numerous stressors in the watershed, complexity of watershed processes, legacy issues, etc.).
- New circumstances in the watershed that may affect water quality (for example, new water diversions, decreased road density, large-scale flooding or fire).

Field units should actively participate in the biennial cycle for updating 303(d) lists by providing information to the respective State agency or tribal government for use in the listing/delisting process.

Assessment

If the conclusion from step 1 (Validation) is that the waterbody is correctly listed, the next step is to do an appropriate level of assessment. The assessment must be detailed enough to provide context and determine the processes that are leading to the water quality problems by source(s) and parameter(s) of concern. The steps of the assessment process are:

1. Identify whether water quality standard violations are management related.
2. Determine if sufficiently stringent management measures are in place.

The assessment would include a listing of 303(d) waterbodies, the impaired beneficial use(s), and the parameters for which established criteria (numeric or narrative) have been exceeded. If the criteria are narrative (that is, the sediment water quality standard), an indicator such as fine sediment or width to depth ratio should be selected and a numeric target level for the indicator established. Discussion on how the selected indicator(s) and numeric target level relates to the impaired beneficial use should follow. States and/or tribes should be involved in the selection of both the indicators and target level for the indicator.

In addition, the assessment should discuss the physical, biological, and chemical watershed processes. The discussion should focus on how the watershed functions and how the water quality parameters of concern or indicators are influenced by natural processes. In addition, any applicable cumulative effects of land management activities need to be assessed. A summary of the parameter sources and loading within the watershed should be presented. The foundation of the assessment should be the Forest Service and BLM *A Framework for Analyzing the Hydrologic Condition of a Watershed* (June 1998).

1. Is the problem management related?

The assessment should attempt to identify situations where past, present, or proposed BLM or Forest Service management activities (including activities of permittees such as abandoned mines) are impairing or contributing to the impairment of beneficial uses. If the source of the water quality impairment is not related to BLM or Forest Service management, and these management activities do not and will not affect the water quality parameter(s) of concern, that information should be documented and sent to the relevant State agency. If the source is BLM or Forest Service management related, or if there is some future cause for concern, then the next question in the decision framework needs to be addressed.

2. Are sufficiently stringent measures already in place?

The next question that the assessment should answer is whether sufficiently stringent measures are already in place. State agencies have the option under current Environmental Protection Agency (EPA) guidance on Section 303(d) to not list or to delist impaired waterbodies where sufficiently stringent measures or other management practices are being implemented. However, current EPA regulations require that the measures be sufficiently stringent to bring the waterbody into compliance within two years. Where standards cannot be achieved in the two-year timeframe, States have the option of placing these waterbodies into a different category, or listing them separately, while noting that adequate and appropriate measures are in place and have been implemented.

Table 1 displays the measures that must be addressed to determine if a waterbody can be brought into compliance in a timely manner. If analysis supports this conclusion, then that information should be documented and submitted to the State agency. If measures are not sufficiently stringent, will not take effect within the specified timeframe, or cannot be adequately documented, then proceed with the development of a WQRP.

Selecting an Appropriate Level of Assessment

The following questions and the complexity factor analysis table (Table 2), will assist in determining the appropriate level of assessment:

- How complex is the water quality problem? (See complexity factors displayed in Table 2).
- What scale is appropriate to the complexity of the water quality problem?
- What are the appropriate procedures and tools to identify the source and extent of the pollutant(s)?
- What type of assessment and level of rigor will be needed?

Assessment Processes and Tools at Multiple Scales

Some of the most common assessment procedures and tools used by the BLM and the Forest Service are listed below. They cover a range of scales and intensities, and may provide opportunities to simultaneously address other areas of concern or meet the requirements of other laws. Some of these assessments are mandatory, and others are optional. The assessment may need to cover multiple scales in order to provide the context needed to adequately address and set the stage for solution development. To avoid duplication and to meet strategy elements, use of these tools should occur prior to or concurrently with an evaluation of other planning documents or efforts required to meet other land management objectives or laws (see Linkages section).

- Mid-scale Assessments: Subbasin review is a mid-scale assessment tool developed for implementation of the Interior Columbia Basin Ecosystem Management Project (ICBEMP). It is an intergovernmental collaborative process in which mid- and finer-scale information is used to set the context for actions at finer scales, compare broad-scale findings to existing local information, and identify management opportunities and prioritize areas for watershed analysis. Even though the process is required for the ICBEMP area, it has application to other geographic areas.

Table 1. Factors for determining if sufficiently stringent measures are in place.

Data Analysis	The data analysis must show that the management practices are specific to the problem and will result in the restoration of water quality and attainment of standards.
Mechanisms Requiring Implementation	Such mechanisms ensure that the identified pollution controls will be implemented. They include best management practices required in Federal or State permits, licenses or other controls.
Reasonable Timeframe	A reasonable timeframe clearly defines the expectation of implementation and water quality standard attainment, and is to be determined on a case-by-case basis.
Monitoring	Monitoring will show whether BMPs or other controls are being implemented and whether the expected progress toward attaining water quality standards is being achieved.

Table 2. Factors to consider in selecting an appropriate level of assessment.

	Complexity Factors
Extent of Problem	If the water quality impaired waterbody is of small spatial extent, the scale of analysis can be focused on a smaller area.
Federal Ownership	The degree of interspersed ownership may add complexity, and increase the need for collabo ration in the analysis process.
303(d) Listing Parameters	The more parameters that a segment is listed for, the more complex the analysis to determine cause, processes and development of a WQRP.
Complexity of Watershed Processes	When watershed processes are difficult to decipher, inadequate data is available, or a large amount of variability exists, the intensity and scale of analysis increases.
Beneficial Uses	Where beneficial uses in the watershed are covered by other laws or policy commitments, the complexity of the project increases. For example, the presence of threatened, endangered or candidate species, or municipal watersheds increases the complexity of analysis.
Land Uses Allocations	When there are other land use allocations such as wilderness or Wild and Scenic Rivers, or **or** uses such as stream diversions, special use permits, 1872 Mining Act claims, etc., the complexity of analysis will increase.
Existing Management Situation	Where there are numerous past, present, and planned activities, cumulative effects will increase the intensity of the analysis and generally require a larger scale.
Inherent Controversy	When the watershed or activity has a past history of being highly controversial, the intensity and scale of analysis should be higher to withstand challenge.
Level of Planned Activity	The greater the intensity or amount of disturbance for a planned activity the more intense the analysis.

- Watershed-Scale Analysis: Watershed-scale analysis is conducted under the Northwest Forest Plan and the ICBEMP, and is a key action item in the *Clean Water Action Plan.* The procedure used to conduct watershed-scale analysis is described in the *Federal Guide for Watershed Analysis.* Conducting Ecosystem Analysis at the Watershed Scale (EAWS) provides the foundation for assessing the capabilities and limitations of particular watersheds. EAWS is a building block that provides context for site-specific management actions and supports informed decision making. The water quality module of the *Federal Guide for Watershed Analysis* may provide a sufficient level of information depending on the scope and complexity, to describe the water quality problem.

- Site-specific Assessment: The National Environmental Policy Act (NEPA) often requires agencies to determine what the cumulative effects of past, current, and planned management activities and natural disturbances may be on water resources. The result may be an Environmental Impact Statement, an Environmental Assessment, or a Conformance Determination, or the project may be classified as a Categorical Exclusion. Assessments for the project's NEPA compliance must address 303(d) segments if they might be affected by the project.

The geographic extent of the assessment and cumulative effects analysis would be based on project scoping. The size of the watershed to be assessed should be commensurate with the location and extent of the water quality problem, and how the parameters of concern and/or indicators relate to the stream segment(s) in relation to the location of the proposed project. Where site-specific analysis is geographically extensive or complex, it is greatly facilitated by first conducting watershed and/or mid-scale analyses.

The following two tools can facilitate water quality assessments at all scales:

- *A Framework for Analyzing the Hydrologic Condition of Watersheds* (June 1998): This framework (developed by BLM, Forest Service, EPA and the Natural Resources Conservation Service) provides a technical and integrated process for completing analysis of hydrologic conditions within a watershed. It may be used at various scales and should provide a sufficient level of assessment to identify the source(s) and extent of the pollutants. The assessment uses the six steps outlined in the *Federal Guide for Watershed Analysis.*

- *Roads Analysis Procedure* (draft, February 1999): The Roads Analysis is an ecological approach to transportation planning addressing both existing and future roads, including those planned in unroaded areas. The *Roads Analysis* is a 6-step process designed to produce road-related information and maps to support analyses at multiple scales and subsequent decision making.

Solution Development

Develop/Supplement WQRP

If the conclusion arrived at from using the decision framework is to develop a WQRP, then the entire drainage contributing to the segment under consideration must be addressed at a geographic scale(s) appropriate to the water quality problem. Where watersheds have mixed ownership, the BLM and Forest Service should work collaboratively with State, tribal, and private citizen participants to develop a WQRP and a TMDL. **Once the WQRP (and, where appropriate, the TMDL) has been submitted to the State, then management actions must be carried out in conformance with the WQRP and/or TMDL provisions.** Conformance, in some instances, may require Forest Plan or Resource Management Plan amendments. A determination of the need for an amendment is specific to the effect of the WQRP, or the cumulative effect of several WQRPs, on the standards and allocations established by these respective plans.

WQRPs should be developed according to State or tribal guidance or direction. Most WQRPs will contain the following common elements:

- Condition assessment and problem description;
- Goals and objectives for recovery;
- Management actions to achieve objectives;
- Implementation schedule;
- Monitoring/evaluation; and
- Public participation.

An assessment that determined the necessity for a WQRP may provide some of the necessary information for the assessment stage of the WQRP itself. In particular, it may have covered some of the technical considerations needed to determine appropriate measures for water quality-based controls. These include:

- Normal water quality conditions (that is, a condition assessment using appropriate indicators);
- Flow rates and an accompanying hydrologic analysis as appropriate to concern;
- Seasonal variations in terms of the timing of beneficial uses, the effects on water quality, and the determination of an appropriate timeframe.
- Existing source inputs or other appropriate source inputs.
- Water type (stream or lake), as it affects dissipative capacity.

The assessment and/or WQRP should be submitted to the State or tribal water quality management agency for consideration in the TMDL development and 303(d) listing and delisting processes.

Proceeding Prior to State or Tribal Review

In cases where new activities and project analysis trigger the decision framework, there are four decision points (see Figure 1) where line officers must decide whether to proceed prior to the results of State or tribal review. Line officers must make this decision when they have submitted to a State or tribe:

1. Documentation that a listing is not valid;
2. Documentation that the water quality problem is not management related;
3. Documentation that sufficiently stringent measures are already in place; or
4. A Water Quality Restoration Plan (WQRP).

This decision may become necessary if States and/or tribes are not able to respond in a timely manner, even though every effort is made to coordinate with States and/or tribes through each step of the framework. Line officers should use the complexity factors described above to determine the risks of continuing with a proposed action without

formal approval from the State or tribes. Line officers should also ask the following questions:

- What irretrievable resource losses may result (1) from delay, (2) from proceeding on an incorrect assumption, or (3) with faulty information?
- How easily can the project be modified at a later time if new information is produced, or if States or tribes have concerns?
- What is the increased risk of appeals or legal challenges from proceeding without review?
- If a WQRP has been submitted, how adequate is it to restore the impaired water?

There are many 303(d) watersheds that are not scheduled for development of a TMDL for several years. Early on in the assessment process line officers need to know options and risks of proceeding with management activities in drainages with listed waterbodies prior to State or tribal review of a WQRP (or other products resulting from use of the decision framework such as validation) where no State approved TMDL exists. States have developed different requirements for proceeding with activities prior to TMDL development. In general, following the protocol should satisfy all State requirements while meeting the intent of the Clean Water Act although each State may use different approaches for satisfying requirements. To avoid any complications, it is imperative to coordinate activities with the appropriate State agency.

In mixed ownership watersheds, until a TMDL is developed for a 303(d) segment, the following options have been identified to assist with the decision to proceed with an activity. The options are based on the scale and complexity of the project and the desired level of assurance that a project can proceed without effective challenge.

- Option 1. In a watershed with mixed ownership, develop a WQRP for the Federal portion of the drainage area. The WQRP must focus on management practices necessary to maintain and protect water quality and to identify what restoration practices are necessary to bring affected waters back into compliance. The State will eventually develop a TMDL covering the entire drainage area by developing a TMDL using information in the WQRP(s). Ensure that all activities and/or projects meet requirements in the completed WQRP.

- Option 2. Where possible, work with the State, tribes, and other ownerships to develop a TMDL or WQRP for the entire drainage influencing the 303(d) segment. This option is particularly suited to projects with a high level of complexity and a high potential for challenge. If there is concurrence on the actions to be taken to restore water quality, ensure that the activities and/or proposed projects follow the recommendations in the proposed TMDL or WQRP.

- Option 3. Request the State to accelerate the development of a TMDL. Some situations may require that a State approved TMDL be issued prior to the initiation of any projects.

Implementation and Monitoring

Implementation

Once a WQRP is submitted to and approved by the State, management actions must be carried out in accord with the provisions of the WQRP. If a decision is made to proceed prior to approval, all actions must be carried out in a manner consistent with the WQRP. Activities and/or prescriptions contained within the WQRP must be implemented as scheduled. Specific actions that require new activities such as restoration projects are subject to National Environmental Policy Act (NEPA) requirements prior to implementation. To work effectively, WQRPs must conform to the concepts of adaptive management. If monitoring or the future development of a TMDL outdates and makes a WQRP ineffective, then the WQRP must be updated and refined to reflect new conditions.

Monitoring

Monitoring established under WQRPs should be designed and implemented to address both implementation and effectiveness of the WQRP. Questions to consider include, but are not limited to, the following:

- Are the water quality standards applicable to the management activities being achieved?
- Are the management practices accomplishing their goal (that is, are they effective in achieving the in-stream and riparian objectives)?
- Are the provisions of the WQRP being implemented?
- Is the WQRP accomplishing its goal (that is, moving the waters toward compliance with water quality standards within a reasonable timeframe)?

It is important to consider the appropriate scale for monitoring corresponding to that of the WQRP which may vary from a single stream reach to drainages of various scales. If the water quality problem or the WQRP addressing it extend to mixed ownership, monitoring may require

coordination with private parties and other State, Federal, and tribal agencies.

Monitoring frequency also must be taken into consideration. Different ecosystems will have a range of recovery times depending on the parameters at issue, their causative factors, and the nature of the restoration actions that are undertaken. Monitoring frequencies should reflect the expected timeframes of management and/or restoration activities and ecosystem response.

Finally, monitoring associated with restoration of 303(d) listed waters should be built into the overall monitoring framework and strategy under the Objectives and Standards of agency planning processes, including large-scale assessments and plans such as the Northwest Forest Plan and the Interior Columbia Basin Ecosystem Management Project (ICBEMP). This includes coordinating with other agency and non-agency monitoring efforts to ensure that waters qualifying for 303(d) listing are identified.

Water Quality Restoration Plan Linkages With Other Planning Processes

The intent of this section is to improve efficiency by combining WQRP development with other related planning and analysis processes and to maximize the likelihood of addressing an area in an interactive, interconnected manner (ecosystem management). Land managers need to take advantage of other ongoing efforts to ensure cost efficiency and comprehensiveness by reducing duplicative processes. One of the most important links is through assessment or analysis processes that adequately address multiple issues or needs. One of the most important mechanisms for making this connection is the 6-step process described in the *Federal Guide for Watershed Analysis.*

The six step analysis process can be applied at multiple scales in the step-down hierarchy (that is, a subbasin(s), group of watersheds, a watershed, group of subwatersheds, etc.). The results of the six steps are the common elements that must be addressed to support legal and regulatory requirements such as biological assessments, allotment evaluations, WQRPs, etc. These steps are the key links that occur regardless of the issue, or issues, triggering the process.

The following is a matrix (Table 3) and discussion of assessment, planning, priority setting, and decision-making with similar requirements, where with some additional effort, more than one requirement may be satisfied at one time. This discussion is not exhaustive and should be added to as other work priorities and processes are identified. A more complete discussion of this topic can be found in *Water Strategy for Oregon/Washington BLM* (draft, July 1998) The matrix found in Table 3 graphically illustrates the linkages between these activities and legal requirements for assessment, planning, decision-making, monitoring, and public participation.

Ecosystem analysis at multiple scales supports and facilitates all of the following related activities.

Endangered Species Act

The Endangered Species Act (ESA) often has a direct link with the CWA in that the listing of an aquatic species is frequently related to deteriorating water quality. It is not uncommon to find listed species in conjunction with listed waterbodies. When this is the case, key linkages will occur and should be dealt with together in the assessment, recovery (restoration), implementation, monitoring, and accountability requirements for both Water Quality Restoration Plans (WQRPs) and Biological Assessments (BAs), Biological Opinions (BOs), Endangered Species Recovery Plans, and other ESA documents. Region 10 of the Environmental Protection Agency and the Pacific Northwest offices of the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) are in the process of integrating the requirements of the CWA and the ESA wherever and whenever possible. Their goal is to emphasize ecosystem management and minimize what is frequently referred to as double jeopardy in complying with both the Clean Water Act and the Endangered Species Act.

National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires agencies to determine the cumulative effects of past, current, and planned activities in conjunction with natural processes, on aquatic resources. Thus, NEPA requirements should address many of the requirements for the assessment needed in WQRPs. Successfully implementing the 303(d) protocol inextricably links NEPA analysis with WQRPs, since direct linkages occur at all scales. As explained in the Assessment section, many WQRPs can be part of a NEPA document, thus avoiding duplication of effort.

National Wild and Scenic Rivers Act

The National Wild and Scenic Rivers Act carries with it many provisions for the protection and enhancement of water quality. One of the most important is the requirement for a river management plan that specifically emphasizes protecting the river's "outstandingly remarkable values." Water quality is often listed as one of the values. It is important to consult river management plans when developing WQRPs since the management practices necessary to bring the waterbody back into compliance may already be implemented through this mechanism. Conversely, when developing river management plans make sure that the WQRP must be included in the plan where feasible and of an appropriate scale.

National Wilderness Act

Congressionally designated Wilderness Areas come with significant protection for water quality. Where waters in Wilderness Areas are listed under section 303(d) an opportunity exists to couple the WQRP with the Wilderness Management Plan and develop both concurrently. In instances where the Wilderness Management Plan has already been completed, make sure to review the document before developing the WQRP, since provisions for addressing water quality may have already been developed and/or implemented.

Federal Power Act

This act requires the Federal Energy Regulatory Commission to ensure that proposed power projects are consistent with plans developed by State and Federal agencies for improving, developing, or conserving affected waterways. The key linkage here is between WQRPs and section 4(e) requirements addressed in plans that have already been developed, or are in the process of development. Also, where no plan has been developed, agencies will still need to ensure that project proposals take into account effects on listed waters.

Safe Drinking Water Act

Under the Safe Drinking Water Act, EPA has delegated to the States the authority to develop Source Water Assessment and Protection Programs (SWAPPs). Currently, the process for developing SWAPPs is underway, with the anticipated outcome a collaborative approach for developing source water protection plans. A WQRP or TMDL that is designed to protect and restore water quality parameters of concern (such as fecal coliform) to source water supply areas should have a direct linkage to the source water protection plan. While the development of these plans is incomplete, it is anticipated that they will incorporate completed WQRPs and TMDLs. Likewise, where these have not been developed, it is anticipated that the protection plan would include a WQRP to address the listed water. Both types of plans are collaborative efforts that address many of the same issues and include multiple jurisdictions and ownerships.

National Forest Management Act, Federal Land Policy and Management Act

The National Forest Management Act (NFMA) and the Federal Land Policy and Management Act (FLPMA), require the Forest Service and BLM to prepare interdisciplinary land use plans. Planning criteria to guide the planning process are based on policy, regulation, and Federal law, including the CWA. The resulting Land and Resource Management Plans (LRMPs) and Resource Management Plans (RMPs) establish goals, objectives, standards, and guidelines to ensure implementation of the CWA at the National Forest- or Resource Area-scale. These LRMPs and RMPs guide management activities that could have an affect on water quality.

Other Plans/Processes

There are many other planning and analysis processes periodically undertaken by the Forest Service and BLM that will have the potential for direct linkages to the development of WQRPs. They include: Transportation Management Plans, Rangeland Standards and Allotment Evaluations, and activity-level plans such as timber sales. Each of these have elements that may be tied in closely to the development of WQRPs and TMDLs since they all have the potential to affect water quality, and may all eventually tie into NEPA. Developing these plans in concert with WQRPs is cost effective and will ensure that the Forest Service and BLM are complying with the intent of the CWA.

Instream Flows and Water Uses

The ability to effectively restore water quality is directly related to the ability to keep water in stream channels. Adjudications where the water rights and amounts are determined for Federal reservations (such as National Forests, etc.) are critical to meeting this need. State regulatory agencies responsible for CWA implementation and the EPA need to be made aware that WQRPs are based on the premise of reserved rights for instream flows to keep water in the channel on Federally managed property. Without sufficient flows, meeting water quality restoration expectations will be unattainable. At the same time, applications for special use permits that include the use of water must be thoroughly analyzed to ensure that our ability to maintain or restore water quality will not be compromised.

Clean Water Action Plan

The recently released interagency *Clean Water Action Plan* (CWAP) establishes a framework that includes schedules, processes, responsibilities, and action items for restoring and protecting the Nation's waters. One of the strengths of the framework is the intent to collaboratively address all lands contributing to water quality problems, public and private. This approach should lead to more coherent restoration and protection plans that should in turn lead to a more comprehensive restoration of water quality. This should also aid in the recovery of threatened and endangered aquatic species

A process called Unified Watershed Assessment (UWA) is the collaborative framework under the CWAP to establish priorities for water quality restoration and protection. One of the major factors that has been used to assess and prioritize waters for restoration is the presence or absence of 303(d) listed waters. Thus, there is a direct linkage to the 303(d) strategy and an opportunity for the Forest Service and BLM to participate and help establish priorities for restoration. The Forest Service and BLM should take advantage of restoration actions on non-Federal lands in watersheds with mixed public and private ownership. Many of these actions will have a direct or indirect benefit for private lands. Linkages to the UWA process and alignment with its subsequent actions should benefit the recovery of aquatic species of concern.

Tribal Processes

Tribes have the legal right to implement the CWA on tribal lands, including setting water quality standards. These standards may be more stringent than those developed by the States since they are often developed for spiritual or religious reasons. It is important to coordinate and collaborate WQRP development with tribes that have reservations downstream of Forest Service or BLM land.

State Processes

State agencies have the primary responsibility for implementing the CWA and developing Total Maximum Daily Loads (TMDLs) for 303(d) listed waters. A TMDL is basically an allocation (discharge allowance to the waterbody) for the particular pollutant for which the waterbody is listed, that is assigned to contributing sources. Each State will have a different process, set of priorities, and schedule for the development of TMDLs.

In many cases State schedules and priorities have been established through settlements in litigation, thus limiting timetable flexibility. One goal of this protocol is to mesh the Forest Service and BLM processes with the appropriate State agency processes so as to minimize confusion, duplication, and second guessing. More importantly, this protocol is designed to maintain as much Forest Service and BLM flexibility and control over the process, scheduling, and decisions as possible. To accomplish this, the Forest Service and BLM should work with State agencies as they set TMDL development schedules and take an active role in the listing and delisting processes for Section 303(d). Many States are currently faced with enormous backlogs of listed waters, often with court-imposed schedules, making it difficult to accommodate Forest Service and BLM priorities and scheduling needs. As a result, there is a presumption that in many cases this protocol will be applied at a faster rate by the Forest Service and BLM on their own schedules. This will allow the Forest Service and BLM to:

1. Maintain current knowledge of State priorities and schedules for TMDL development and schedule the completion of the water quality restoration plan (WQRP) either prior to or concurrent with the State schedule. This allows the State to use WQRPs in the TMDL development process; and

2. Proceed with land management activities in a watershed once a WQRP has been developed and submitted to the appropriate State (see Figure 1), where the proposed or ongoing activity fits in the plan to restore water quality.

Table 3. Linkages to the Clean Water Act.

	Determination of Priorities	Assessment	Planning Actions	Decisions/ Agreements	Monitoring	Public Participation
Clean Water	Lists updated every 2 years. Priorities for TMDL/WQRP generated from agency or State needs.	1) Determines scale and complexity of problem. 2) Supports development of a WQRP.	WQRPs. A broad range of documents can be used; State criteria must be addressed.	BLM and FS decisions vary by plan, project, or action; State accepts or rejects WQRP; EPA has final approval authority.	A required part of the WQRP; may wish to expand for potential listing factors.	May be a required part of WQRP, depending on State regulations.
Endangered Species Act (aquatic species)	Species at risk; the "proposed' period is used for validation.	Biological Assessment to document effects to the current baseline for the species and its habitat.	Recovery Plans done by the regulatory agency.	Biological Opinion is provided by the regulatory agency.	Monitoring is developed in the BA and the BO.	None: Conferencing and Consultation processes dominate.
Rangeland Standards and Guidelines FLPMA; Taylor Grazing Act	Resource conditions and values at risk (including endangered species and 303(d) listed waters).	Allotment evaluation; generally on a five-year cycle.	Allotment Management Plans; Coordinated RMPs.	Grazing decisions and agreements (43 CFR 4100); Permit terms and conditions.	Photo trend, frequency study, etc.; developed through AMPs, evaluations.	NEPA processes; Affected interest notification.
Wild and Scenic Rivers Act	Initiated by congressional designation.	Outstandingly Remarkable Values identified by Congress.	Plan required for the river corridor to address recreation and other ORVs.	Activity Plan decision covering the river corridor and supplementing the RMP.	Monitoring established relative to the ORVs.	Generally through a NEPA process.
National Environmental Policy Act	Driven by a proposed action or project.	Interdisciplinary; environmental impacts are analyzed based on issues related to the proposal.	Plans must be in compliance with NEPA.	EAs require a FONSI & Decision Record; EISs require a Record of Decision.	Monitoring requirements may be established in the ROD.	Timeframes and process requirements are well established.
Federal Power Act; Northwest Power Act	Project area and effects from Federally licensed dam projects.	Starts with initial consultation documents and associated studies.	Applicant submits plan in the application; plan may include commitments affecting public lands.	FERC provides a decision on the license application with conditions developed in the process.	Monitoring is generally established during licensing and is likely to continue beyond the license.	Process is generally open to the public and non-governmental organizations.

Table 3. Linkages to the Clean Water Act. (Continued)

	Determination of Priorities	Assessment	Planning Actions	Decisions/ Agreements	Monitoring	Public Participation
Safe Drinking Water Act	Location: area potentially affecting public water supply.	State process; delineates source water outlines potential sources of contamination.	State process; protection plans will be required, BLM/FS should assist in development of process.	BLM and FS may sign MOAs or MOUs with local municipalities.	No fixed requirements for BLM/FS.	Generally a State and areas and municipal process.
National Forest Management Act; Federal Land Policy & Management Act	Mandated revision schedules; issues; public interest; national policy; new information.	Inventory data collection is basis for analysis of management situation and development of alternatives.	Resulting plans are developed for an administrative unit or groups of units.	Plan decision sets sideboards for site-specific and project-level decisions.	Monitoring is a key element of plans, to include implementation, effectiveness, and validation.	Required by law throughout the planning process.

Abbreviations used in this table:

AMP = Allotment Management Plan
BA = Biological Assessment
BLM = Bureau of Land Management
BO = Biological Opinion
EA = Ecological Assessment
EPA = Environmental Protection Agency
FERC = Federal Energy Regulatory Commission
FONSI = Finding Of No Significant Impact
FS = Forest Service
MOA = Memorandum of Agreement
MOU = Memorandum of Understanding
NEPA = National Environmental Policy Act
ORV = Outstandingly Remarkable Values
TMDL = Total Maximun Daily Load
WQRP = Water Quality Restoration Plan

Hierarchy of Scales

Planning and assessment processes begin at the broad scale and step down to finer landscape scales. Broad- and mid-scale policy and direction play an important role in development of smaller-scale planning documents by providing overarching standards, guidelines, and allocations. Thus, it is essential that these documents are consulted prior to development of WQRPs to prevent duplication of effort. Partners in the WQRP development process may not be familiar with the concept of placing smaller-scale planning into its broad or mid-scale context. Alternatively, they may want to see standards, land allocations, etc., that have been established at the broad or mid scale repeated in WQRPs, or at least referenced in the document. Table 4 provides a conceptual model of the hierarchy of planning processes:

Interior Columbia Basin Ecosystem Management Project

The Interior Columbia Basin Ecosystem Management Project (ICBEMP) sets broad-scale goals and objectives for over 70 million acres of Forest Service- and BLM-administered lands in Oregon, Washington, Idaho, and Montana. One of the primary goals of this plan, and a direct link to this protocol, is the restoration of aquatic resources and watersheds. The hierarchical step-down watershed planning, assessment, and analysis provisions of ICBEMP are key elements for addressing the 303(d) waters. These processes are intended to be collaborative with opportunities for involvement by all government and tribal stakeholders. The information generated by these processes may prove valuable in addressing 303(d) waters and developing WQRPs. As currently drafted, the specific ICBEMP assessment tools include Subbasin Review (SBR), Ecosystem Analysis at the Watershed Scale (EAWS), and project-scale NEPA assessments. The Aquatic Conservation Strategy of the ICBEMP contains standards, allocations, guidance and direction that will directly support the development of WQRPs. The 303(d) protocol is incorporated by reference.

Northwest Forest Plan

The Aquatic Conservation Strategy of the Northwest Forest Plan (NFP), like the ICBEMP, sets standards, direction, land allocations, and restoration priorities for the area of Oregon and Washington (across the area from the Cascades to the Pacific Ocean). The NFP calls for collaboration in assessment (EAWS) and planning processes, setting the stage for the involvement of all parties in the development of WQRPs. Since watershed analysis and ecological restoration are ongoing, these should be recognized, referenced, and/or incorporated in the development of WQRPs.

Table 4. Hierarchy of Planning Processes.

Ecological Unit	Planning/Assessment Process
River Basin(s)	Northwest Forest Plan/Interior Basin Ecosystem Management Project/Inland West assessment process
Subbasin(s)	Resource Management Plans/Forest Plans/Sub-basin review/*Clean Water Action Plan*
Watershed(s)	Ecosystem analysis (EAWS-applies at broader scales as well) WQRPs/BAs/Wild and Scenic River Plans/Inland West Watershed Reconnaissance/Allotment Management Plans
Subwatershed(s)	Activity plans/Allotment Management Plans/Transportation Plans/Timber Sales/Road Restoration
Site	Same as above

Forest Plans/Resource Management Plans

Forest Plans and Resource Management Plans contain specific direction, allocations, standards and guidelines for the mid and finer scales. Many of these plans were developed with water quality as one of the major issues, and will contain material directly applicable to WQRPs.

Inland West Water Reconnaissance

The Inland West Water Reconnaissance is an initial attempt by the Forest Service at categorizing watersheds based on seven parameters. Watersheds are placed in one of three categories depending on scores for the following: (1) watershed integrity (Is the watershed functioning properly given the geomorphic context?); (2) water quality (good, fair, poor); (3) vulnerability (landslide and surface erosion potential, high or low); (4) identification of high quality, highly important stream segments (for example, blue ribbon trout stream); (5) degraded stream segments (impacted by mining, braided systems, etc.); (6) water infrastructure (diversions, etc.); (7) fisheries (presence/absence, strong/weak). The information was placed on GIS layers and can be retrieved as maps. Many of these categorizations were based on professional judgment as a general reconnaissance of condition, with the expectation that field verification would occur over time. For more information, contact the Regional Offices of Forest Services Regions 1 (Missoula, Montana), 2 (Denver, Colorado), or 4 (Ogden, Utah).

Other Considerations: Multiple Land Ownership

In some cases the Forest Service and BLM may elect to rely on or join a State's TMDL development effort rather than proceeding independently. This may be particularly prudent in watersheds of mixed ownership where the listed water is impacted by both Forest Service or BLM activities and non-Federal activities. Where such situations exist and there is an urgent need for Forest Service or BLM to initiate land management activity, States may be willing to modify their schedules to accommodate that need and/or may agree to initiate a joint process to address the listed water. In situations where States are unable to accommodate Forest Service and BLM schedules, non-Federal landowners may be willing to cooperate in joint assessment/restoration processes; these may result in more comprehensive restoration plans and/or lower litigation risks for proceeding with management activities.

Glossary

***Hydrologic Unit Code* (HUC):** A standardized watershed coding system developed in the mid-1970s and adopted by the Water Resources Council for agency use. The hierarchical system codes watersheds from larger to smaller drainage areas. The eight digit code consists of two digits for each level (fields) that identify the geographic region, sub-geographic region, accounting unit, and cataloging unit. The smallest HUC in the standardized system is the 4th-field HUC, referring to subbasins. The eight digit system has been expanded by some agencies to include smaller drainage areas known as watersheds (5th-field HUC) and subwatersheds (6th-field HUC).

***Mid Scale*:** A planning scale that includes drainage areas ranging from a subbasin (4th-field hydrologic unit code) to a group of subbasins.

Sufficiently Stringent Measures (application of sufficiently stringent pollution requirements): As defined in 40 CFR Section 130.7(b)(1), sufficiently stringent pollution requirements (measures) consist of "other pollution control requirements", such as required BMPs, that are stringent enough so that implementation bring affected waters into compliance in a reasonable timeframe. A reasonable timeframe is currently defined as attaining water quality goals in two years. In general, adoption of land use plans that include land allocations or standards that will effectively address water quality problems may fit this category. An example is the adoption of a riparian allocation that together with appropriate management standards, may adequately address a waterbody listed for temperature.

TMDL (Total Maximum Daily Load): A TMDL is a written, quantitative assessment of water quality problems and contributing pollutant sources. It specifies the amount a pollutant needs to be reduced to meet water quality standards, allocates pollutant load reductions among pollutant sources in a watershed, and provides the basis for taking actions needed to restore a waterbody. It can identify the need for point source and nonpoint source controls. The TMDL includes the sum of the waste load allocation for point sources, plus the load for nonpoint sources of pollution, including "natural" background levels, plus a load to allow a margin of safety due to uncertainty. A "load" is the concentration of the pollutant of concern.

***Watershed Scale*:** An analysis and planning scale that includes a drainage area ranging from subwaterhsed(s) and watershed(s); 6th- and 5th-field hydrologic unit codes. This scale is an order of magnitude in range (20 to 200 square miles, approximately).

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